

Alert	
Indication	Resuscitation of the Newborn Infant. If intravenous access is not available, and adequate ventilation and chest compressions have failed to increase the heart rate to >60 beats per minute, then it is reasonable to administer endotracheal adrenaline. [1, 2]
Action	Catecholamine with alpha and beta adrenergic actions.
Drug Type	Inotropic vasopressor.
Trade Name	Aspen Adrenaline 1:10,000 injection.
Presentation	1:10,000 ampoule [100 micrograms/mL]
Dosage / Interval	50–100 microgram/kg (0.5 –1 mL/kg of adrenaline 1:10,000 solution) via endotracheal tube.
Maximum daily dose	The maximum single dose is 1mg.
Route	Intratracheal.
Preparation/Dilution	Administer undiluted. 1:10,000 ampoule [100micrograms/1mL]. [1 mL contains 0.1 mg of adrenaline, so 0.1 mL = 10 microgram of adrenaline].
Administration	Intratracheally via an endotracheal tube as a single bolus. [1] If the intratracheal dose is not effective, an intravenous dose should be administered as soon as possible. [1, 2]
Monitoring	Assessment throughout the resuscitation is based on the infant’s heart rate, breathing, tone and oxygenation. A prompt increase in heart rate remains the most sensitive indicator of resuscitation efficacy. [3] For babies requiring resuscitation and/or respiratory support, pulse oximetry is recommended both to monitor heart rate and to assess oxygenation. The sensor should be placed on the infant’s right hand or wrist before connecting the probe to the instrument. Heart rate monitored using an oximeter should be checked intermittently during resuscitation by auscultation. [3]
Contraindications	Infants with arrhythmias, hypertension or hyperthyroidism. Infants with dilated or ischaemic cardiac disease (relative).
Drug Interactions	No information.
Adverse Reactions	Tachycardia and arrhythmia. Systemic hypertension and lactic acidosis especially at higher doses.
Compatibility	Do not mix with any fluid or other medications.
Incompatibility	Do not mix with any fluid or other medications.
Stability	Not for dilution. Discard remainder after use.
Storage	Store below 25°C. Protect from light.
Evidence summary	Australian Resuscitation Council 2010 statement: There is insufficient evidence for the use of endotracheal adrenaline, but it is likely that a higher dose will be required to achieve similar blood levels and effect. If the tracheal route is used, doses of 50–100 microgram /kg (0.5–1 mL/kg of a 1:10,000 solution) should be used]. The efficacy and safety of these doses has not been studied. ILCOR treatment recommendation: If adrenaline is administered by the tracheal route, it is likely that a larger dose 0.05–0.1mg/kg will be required to achieve an effect similar to that of the 0.01mg/kg intravenous dose. Higher intravenous doses cannot be recommended and may be harmful. [2] (LOE IV, GOR C)

	Pharmacokinetics: The plasma half-life of intratracheal adrenaline for newborn resuscitation is likely to average ~50 minutes. [4]
References	<ol style="list-style-type: none"> 1. Australian Resuscitation C, New Zealand Resuscitation C. Medication or fluids for the resuscitation of the newborn infant. ARC and NZRC Guideline 2010. Emergency medicine Australasia : EMA. 2011;23:442-4. 2. Wyllie J, Perlman JM, Kattwinkel J, Atkins DL, Chameides L, Goldsmith JP, Guinsburg R, Hazinski MF, Morley C, Richmond S, Simon WM, Singhal N, Szlyd E, Tamura M, Velaphi S. Part 11: Neonatal resuscitation: 2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. Resuscitation. 2010;81 Suppl 1:e260-87. 3. Australian Resuscitation C, New Zealand Resuscitation C. Assessment of the newborn infant. ARC and NZRC Guideline 2010. Emergency medicine Australasia : EMA. 2011;23:426-7. 4. Schwab KO, von Stockhausen HB. Plasma catecholamines after endotracheal administration of adrenaline during postnatal resuscitation. Archives of disease in childhood Fetal and neonatal edition. 1994;70:F213-7. 5. Young TE, Mangum B [2008]. Neofax: A manual of drugs used in neonatal care. Acorn Publishing, Inc. Raleigh, NC 27619 6. Australian Injectable Drugs Handbook, 6th Edition, Society of Hospital Pharmacists of Australia 2014

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